

Claims

1. A method for suppressing interference in an electric signal, the method comprising the steps of

5 - sampling the electric signal at a first sampling frequency, whereby a first sequence of samples is obtained,

 - selecting some of the samples in the first sequence of samples on the basis of predetermined criteria, and

10 - downsampling said first sequence using the selected samples, whereby a second sequence of samples is obtained, the second sequence forming a digital presentation of the electric signal in which the interference is suppressed.

2. A method according to claim 1, further comprising the step of comparing the samples of the first sequence with a reference signal, whereby the selecting step is performed based on the comparing step.

15 3. A method according to claim 1, further comprising the step of generating information about the interference content in the samples, whereby the selecting step is performed on the basis of said information.

20 4. A method according to claim 2, wherein the reference signal is formed from said first sequence of samples by limiting the slew rate in said sequence.

5. A method according to claim 3, wherein the generating step includes attaching a flag to each of the samples, the flag to indicate whether the sample is free of interference or not.

25 6. A method according to claim 5, wherein the selecting step includes selecting the samples with the flag indicating that the corresponding sample is free of interference.

30 7. A method according to claim 1, further comprising the step of suppressing power supply hum in the first sequence of samples, whereby values of said samples are updated according to the amount of the power supply hum.

8. A method according to claim 7, wherein the suppressing step includes

 - estimating the power supply hum based on the first sequence of samples, and

35 - deducting the estimated power supply hum from the first sequence, whereby the values of said samples are updated accordingly.

9. A method according to claim 1, wherein the downsampling step

includes low-pass filtering the first sequence.

10. A method according to claim 1, further comprising the step of low-pass filtering the second sequence of samples.

5 11. An apparatus for suppressing interference in an electric signal, the apparatus comprising

- sampling means for sampling the electric signal at a first sampling frequency, whereby a first sequence of samples is obtained,

- selection means for selecting some of the samples in the first sequence on the basis of predetermined criteria, and

10 - downsampling means, operatively connected to the selection means, for downsampling the first sequence by using the selected samples, whereby a second sequence of samples is obtained, the second sequence forming a digital presentation of the electric signal in which the interference is suppressed.

15 12. An apparatus according to claim 11, further comprising comparison means for comparing the first sequence of samples with a reference signal, the selection means being operatively connected to the comparison means.

20 13. An apparatus according to claim 11, further comprising means for generating information about the interference content in the samples of the first sequence, whereby said selection means are adapted to select the samples based on the information.

25 14. An apparatus according to claim 11, further comprising

- means for estimating the amount of power supply hum in the first sequence, and

- means for updating the samples in the first sequence based on the estimated amount of the power supply hum.